

CBES *ShoreFacts* Sources for April 2018

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Below are the details and sources for the information provided in the April 2018 *ShoreFacts* insert.

- ¹ Some of the 284 houses approved prior to 2014 may be out of operation; the county is further refining this number by on-site inspection.

Since we have to assume that some proportion of the 284 houses approved prior to 2014 will still be in operation, by Tyson and the other three integrators, this additional capacity must be accounted for. If we accept the statement, made at the March 21 Board of Supervisors meeting by Bill Satterfield of Delmarva Poultry, Inc. (DPI), that there were 331 houses in use in 2017, this would add an additional 137 old houses to the 194 new CAFOs completed by December 2017 (although it's hard to imagine that over half of the 284 pre-2014 houses are inactive).

- ² As shown in the table below, the 240 new CAFOs will produce 56.5 million chickens a year; with the additional 15 CAFOs pending in 2018, this grows to 60.0 million chickens a year. Adding the minimum of 137 confirmed older CAFOs brings the total to 86.9 million chickens a year.

Using a figure of 48,000 birds per house, 5 flocks per year, and a 2% loss figure, yields the cumulative totals shown in the table, showing that 10.1% of Delmarva production will be met with the new CAFOs (240 approved and 15 pending), almost all of which are Tyson's.

Assuming 40,000 birds per house for the 137 older houses yields an additional 26.9 million chickens (4.5% of the DPI total).

- ³ The latest report from DPI shows 595 million meat chickens grown on Delmarva in 2016 (up from 330 million in 1970). To put this in further perspective, the major portion of Delmarva (south of the C&D Canal) is 5,454 square miles in land mass. The land mass for Accomack County is 450 square miles, or 8.25% of the Delmarva land mass. So a minimum of 15% of the total Delmarva chicken production is now squeezed onto 8.25% of its land mass.

- ⁴ At 2 to 3 tons per acre, 173.8 million pounds of manure will provide one manure application for 58,000 to 87,000 acres (there are 80,000 acres in agriculture in Accomack County and 60,000 in Northampton County, according to the 2007 Census of Agriculture). And critically, the USDA estimates that 2 out of 3 cropland acres fail to meet their criteria for best management practices to prevent nitrogen runoff into nearby waterways (Ribaldo M. Reducing agriculture's nitrogen footprint: Are new policy approaches needed? U.S. Department of Agriculture Economic Research Service, Sep. 1, 2011; <https://www.ers.usda.gov/amber-waves/2011/september/nitrogen-footprint/>).

- ⁵ At 5.5 pounds per bird, 86.9 million chickens equates to 478 million pounds; with 32,000 pounds per truck, this will require 15,000 live-haul truckloads.

- ⁶ The 2018 Accomack County Poultry Report notes that 129,000 gallons per month per poultry house "has been confirmed by actual metered use data." Our previous numbers yielded 162,500 gallons per month per poultry house (*ShoreFacts*, November 2016). These numbers equate to 1.6 and 2.0 million gallons a day (MGD), respectively. DEQ has estimated a total usage of 3.1 million gallons a day (MGD) for all CAFOs on the Eastern Shore, although this number may be reduced once all the modeling is done.

Once all permits have been processed, DEQ will be able to identify not only the total usage, but the usage for both the shallow (Columbia) and deep (Yorktown-Eastover) aquifers.

The Department of Environmental Quality (DEQ) requires a groundwater withdrawal permit for any operation using 300,000 gallons or more per month, which would mean any CAFO with 3 or more houses.

- ⁷ Each poultry house emits 38,000 pounds of ammonia a year (Xin H, Burns R, Li H. Ammonia (NH₃) and hydrogen sulfide (H₂S) emission rates for poultry operations. Jan. 23, 2009; http://articles.extension.org/sites/default/files/w/5/51/Poultry_NH3_and_H2S_emissions.pdf). A 24-house operation will emit more than 4,000 pounds of ammonia a day. With a minimum of 392 CAFOs, this equates to 572 million pounds of ammonia each year. Ammonia is a source of concern for public health, and is a major source of nitrate deposition into the Chesapeake Bay (<https://americanfarmpublications.com/cbf-taps-n-c-state-to-study-poultry-farm-emissions/>).

Breakdown of CAFO Production on the Eastern Shore of Virginia, and Proportion of Delmarva Production

	<i>Million Chickens per Year (cumulative)</i>	<i>% of Delmarva Production (cumulative)</i>
240 CAFOs approved 2014 to 2017		
194 CAFOs completed July 2014 to Dec. 2017	45.6	7.7%
28 CAFOs under construction as of Dec. 2017	52.2	8.8
18 CAFOS permitted as of Dec. 2017 (not yet under construction)	56.5	9.5
15 CAFOS pending in 2018	60.0	10.1
137 CAFOs (minimum) approved prior to 2014	86.9	14.6